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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,453	07/19/2001	Danny Graves	O00-073A	9668

7590

08/28/2003

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EXAMINER

LUU, THANH X

ART UNIT

PAPER NUMBER

2878

DATE MAILED: 08/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,453

Applicant(s)

GRAVES ET AL.

Examiner

Thanh X Luu

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 16-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 26-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-15 and 26-34 in Paper No. 4 is acknowledged. Because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the requirement is still deemed proper and is therefore made FINAL.
2. Claims 1-39 are currently pending.
3. Claims 16-25 have been withdrawn from consideration.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

5. Claim 9, 12, 13, 32 and 33 are objected to because of the following informalities:

In claim 9, last line, Examiner believes "said emitter" should be --said receiver--, as the second mirror is associated with the receiver. Further, "the first reflective region" and "the second reflective region" lacks proper antecedent basis.

In claim 12, "said first reflection region field" lacks proper antecedent basis.

In claim 13, "said second reflection region field" lacks proper antecedent basis.

In claims 32 and 33, "the improved precipitation sensor" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-10, 15, 26, 27, 32-34, 36 and 38, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (preamble of claim 1), hereinafter AAPA, in view of Yasuda (U.S. Patent 4,676,638).

Regarding claims 1-10, 15, 26, 27, 32-34, 36 and 38, AAPA discloses (see preamble of claim 1) a precipitation sensor having an optical emitter, an optical receiver, a first mirror surface for collimating light emitted from the optical emitter, a second mirror surface for focusing the emitted light upon the optical receiver, and an electronic circuit in electrical communication with the optical emitter and the optical receiver. AAPA does not specifically disclose an intermediate reflector. Yasuda teaches (see Figure 1) a precipitation sensor having an intermediate reflector (6c or 6e). Yasuda also teaches (see Figure 1) the intermediate reflector is proximate the emitter or receiver and the intermediate reflector comprises a first reflective or second reflective region. Yasuda further teaches (see Figure 3) the first or second reflective regions pass light at angles not giving rise to total reflection. In addition, Yasuda teaches (see Figure 1) the first or second reflective region having a first mean reflective point being displaced from the automotive glass (2) at least as great as a distance of the first or second leading edge of the first or second mirror surface is displaced from the automotive glass. Yasuda

Art Unit: 2878

also teaches (see Figure 1) a working optical path from the emitter to the first mirror surface to a first reflective region to an outer surface of the automotive glass to a second reflective region to the second mirror surface to the receiver and the path being substantially within solid optical elements, and the first mirror, second mirror and the intermediate reflector comprises a single optical unit. Yasuda further teaches (see Figure 1) molding glass between the intermediate reflector and the automotive glass. Yasuda recognizes that an intermediate reflector allows for improved detection and a more flexible configuration. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an intermediate reflector in the apparatus and method of AAPA in view of Yasuda to improve detection or provide a desired mounting configuration.

8. Claims 1-3, 11-14, 26-31 and 36-38, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (preamble of claim 1), hereinafter AAPA, in view of Pientka (U.S. Patent 5,811,793).

Regarding claims 1-3, 11-14, 26-31 and 36-38, AAPA discloses (see preamble of claim 1) a precipitation sensor having an optical emitter, an optical receiver, a first mirror surface for collimating light emitted from the optical emitter, a second mirror surface for focusing the emitted light upon the optical receiver, and an electronic circuit in electrical communication with the optical emitter and the optical receiver. AAPA do not specifically disclose an intermediate reflector. Pientka teaches (see Figure) a precipitation sensor having an intermediate reflector (at 15 and 24). Pientka also teaches (see Figure) the intermediate reflector is proximate the emitter or receiver and

the intermediate reflector comprises a first reflective or second reflective region.

Pientka also teach (see Figure 1) field regulators (35). Pientka also teaches (see Figure) a glass molding and use of a coloring agent (see column 4, lines 47-50).

Pientka recognizes that an intermediate reflector allows for improved detection and a more flexible configuration. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an intermediate reflector in the apparatus and method of AAPA in view of Pientka to improve detection or provide a desired mounting configuration.

9. Claims 35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (preamble of claim 1), in view of Yasuda or Pientka and further in view of Koyama et al. (U.S. Patent 6,285,037).

Regarding claims 35 and 39, AAPA in view of Yasuda or Pientka disclose the claimed invention as set forth above. AAPA, Yasuda and Pientka do not specifically disclose using visible light. Koyama et al. teach (see column 2) using visible light in a precipitation sensor. Thus, Koyama et al. recognize that visible light or any other wavelength of light is used in precipitation sensors. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use visible light in the apparatus or method of AAPA in view of Yasuda or Pientka and further in view of Koyama et al. as desired to reduce costs.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is (703) 305-


Art Unit: 2878

0539. The examiner can normally be reached on Monday-Friday from 6:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta, can be reached on (703) 308-4852. The fax phone number for the organization where the application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

txl
August 18, 2003



Thanh X. Luu
Patent Examiner